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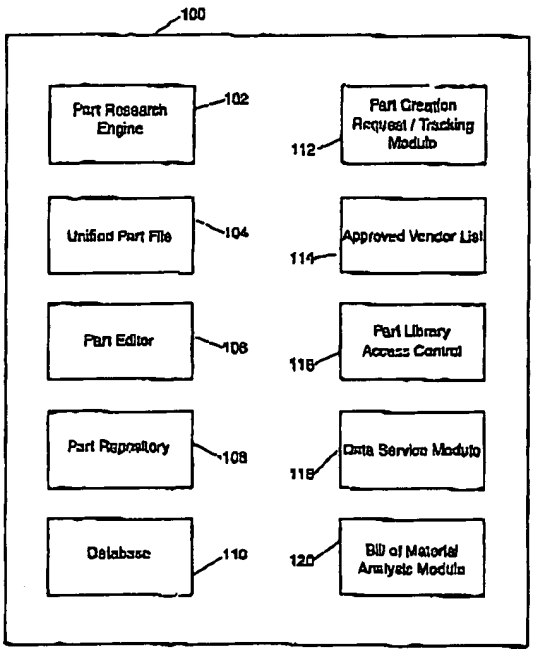
(54) Title: SYSTEM, METHOD, AND COMPUTER PROGRAM PRODUCT FOR NETWORK-BASED PART MANAGEMENT SYSTEM



(57) Abstract: The present invention provides a part management system that facilitates an automated process for the design or electronic components such as printed circuit boards. Manufacturing rules can be stored with part data to ensure that the manufacturing rules are considered throughout all aspects of the design process. A part research engine is provided that performs various functions to aid a designer in selecting parts to be included in the design of a component. The part research engine performs a global part number search. Entering a full or partial part number results in list of part numbers from which selections can be made. The part research engine also can perform a comparative part search. This function is used for finding an equivalent device within and across different manufacturers based on top-level parameters such as the density, package type, I/O requirements, and other factors. Users can select multiple components from the competitive part list for comparing them side-by-side using a direct compare feature of part research engine. A unified part file, part repository and database solve the problems of fragmented part libraries, use of generic part data, and lack of manufacturing rules. A unified part file is used to store part data required to support a suite of design and validation activities throughout the design cycle including the schematic (logical) design, PCB design and layout, thermal analysis, signal integrity and EMI analysis, and manufacturing analysis. The part data represent a manufacturer specific part identified by the manufacturer part number (MPN) instead of a generic part. Upon selection of a part for the schematic design, engineers of various disciplines can start investigating or preparing for the effect of the part selection on various aspects of the design while purchasing people can check pricing and availability of the part.

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